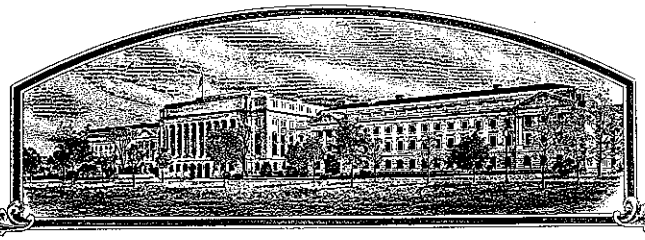
No. 9900209



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

World Wide Wheat, L.L.C.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE 4 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, DURUM

'Utopia'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of Washington, D.C. this thirty-first day of March, in the year of our Lord two thousand.*

PLANT VARIETY PROTECTION OFFICE
DEPARTMENT OF AGRICULTURE

Attest:

Ann Marie Thro

Commissioner
Plant Variety Protection Office

Dan Glickman

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
World Wide Wheat, L.L.C.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
DOI 933

3. VARIETY NAME
Utopia

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
2850 South 36th Street
Suite A-9
Phoenix Arizona 85034

5. TELEPHONE *(include area code)*
602 470-1345

6. FAX *(include area code)*
602 470-1685

FOR OFFICIAL USE ONLY

PVPO NUMBER
9900209

FILING DATE
3-3-99

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
Limited Liability Corporation

8. IF INCORPORATED, GIVE STATE OF INCORPORATION
Arizona

9. DATE OF INCORPORATION
July 31,1996

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*
Rex K. Thompson
2850 South 36th Street
Suite A-9
Phoenix Arizona 85034

Sheldon E. Richardson
2850 South 36th Street
Suite A-9
Phoenix Arizona 85034

FEES RECEIVED

FILING AND EXAMINATION FEES:
$ 2450
DATE 3-3-99

CERTIFICATION FEE:
$ 350
DATE Oct 28, 99

11. TELEPHONE *(Include area code)*
602 470-1345

12. FAX *(Include area code)*
602 470-1685

13. E_MAIL
worldwheat@uswest.net

14. CROP KIND *(Common Name)*
Durum

15. GENUS AND SPECIES NAME OF CROP
Triticum turgidum L. variety durum

16. FAMILY NAME *(Botanical)*
Gramineae

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ☒ NO

18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)

a. ☒ Exhibit A. Origin and Breeding History of the Variety
b. ☒ Exhibit B. Statement of Distinctness
c. ☒ Exhibit C. Objective Description of Variety
d. ☒ Exhibit D. Additional Description of the Variety *(Optional)*
e. ☒ Exhibit E. Statement of the Basis of the Owner's Ownership
f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☒ Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *See Section 83(a) of the Plant Variety Protection Act)*
☒ YES *(If "yes", answer items 20 and 21 below)* ☐ NO *(If "no," go to item 22)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☒ YES ☐ NO

21. IF "YES" TO ITEM 20, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☒ FOUNDATION ☒ REGISTERED ☒ CERTIFIED

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☒ YES ☐ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☒ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER
X Sheldon E. Richardson

NAME *(Please print or type)*
Sheldon E. Richardson

CAPACITY OR TITLE
Chairman/CEO

DATE
3-01-99

SIGNATURE OF OWNER
X Rex K. Thompson

NAME *(Please print or type)*
Rex K. Thompson

CAPACITY OR TITLE
Plant Breeder

DATE
3-01-99

9900209

INSTRUCTIONS

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for $2,450 ($300 filing fee and $2,150 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. DO NOT use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $300 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office
Telephone: (301) 504-5518
FAX: (301) 504-5291
Homepage: http://www.ams.usda.gov/science/pvp.htm

ITEM

18a. Give:
(1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness

18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.

18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

19. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant MAY NOT reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

22. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

23. *See Section 5.5 of the Act for instructions on claiming the benefit of an earlier filing date.*

22. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

1.First Certified Foundation in 1996- Quarantined for Karnal Bunt, was not marketed
2.Increased in Montana for adaptation and evaluation 1997
3.Seed transferred to General Mills of Great Falls Montana for evaluation 1998
4.New foundation seed increase at Elk Grove Ranch, ButtonWillow California out of

~~23. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)~~

Section 22. Continued...
4 cont'd. generation by World Wide Wheat, L.L.C.
5.License to General Mills for Marketing in Montana, Idaho & Washington Jan 3,1999

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

To avoid conflict with other variety names in use, the applicant must check the variety names proposed by contacting: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center–East, Beltsville, MD 20705. Telephone: (301) 504-8089.

Application for Plant Variety Protection Certificate

Variety Name:

DOI 933 (Utopia)

Exhibit A(Revised 9/16/99). Origin and Breeding History

Germplasm Source Information:

The basic germplasm from which the parent population of Utopia was derived can be described as follows, a broad base, diverse population which was a continuance and modification of Arizona Male Sterile Facilitated Recurrent Selection, 1986 (AZ-MSFRS-86) Quality Enhanced Semidwarf Durum Wheat Germplasm Population, released by the University of Arizona.

This Durum population was developed over a period of seven, 2-generation cycles (7 years and 14 generations) by MSFRS population breeding and originated from a broad and diversified array of CIMMYT, Northern US, Canadian and Italian Durum's and descendents of their hybridization assembled in 8 years of conventional pedigree and population breeding. Up to 1000 controlled crosses were made in each spring F_2 generation grown in Southern Arizona with high input, irrigation and nitrogen fertilizer. Approximately 50% were sibs and 50% were top crosses. The F_1 was increased in Montana or Idaho each summer. As this population was being developed for the irrigated Southwest Desert, short stiff straw, large seed size and many tillers with long, but broad and compact heads were selection criteria. Cultivars and lines used for top crosses were selected for yield and semolina quality characteristics. In the early cycles, among established cultivars most often repeated for yield top crossing were "Yavaros 79", "Mexicali 75" and "Westbred Turbo". Among the established cultivars most often used for semolina quality top crosses were "Vic", "Wakoona", "Wascona", "Cando", "Edmore", "Leeds", "Floyd", "Monroe" and "Westbred 881".

Subsequently in addition to the above top cross sources after repeated selection and recombination, lines with superior yield and excellent semolina quality of gluten strength, protein and color were selected from within the population such as "Durex" and "Reva" for quality and "Duraking" for yield.

The source germplasm for the original male sterile gene was chemically mutated "1000D". Subsequently a chemically mutated male sterile gene from "Mexicali 75" has been incorporated into the population. A copy of the University of Arizona Experiment Station Notice of Release is attached (page 3).

DOI 933 is a black awned semidwarf durum cultivar derived from exploitation of a "one irrigation", low input male sterile facilitated recurrent selection (MSFRS) germplasm population established at the University of Arizona, Mesa Experiment Station in 1982. R.K. Thompson developed the population until his retirement. R.T. Ramage continued development until he retired and made it available to the public.

Utopia is a selection from a population derived from the above described germplasm grown in 1984 at Maricopa with only a preplant irrigation and with rainfall of less than 3 inches. Male Sterile plants were tagged and outcross seed harvested. The outcross F_1 seed was increased at Bozeman, Montana to establish the basic low input or "one-irrigation". The best early and determinate growth F_2 plants were selected for future topcrossing. The population has been under development since that time with varying levels of "low" input each year i.e., (1) an emergence irrigation with usual limited rainfall or (2) two irrigation's with no rainfall or under very sandy soil conditions, or (3) rainfall only in one occasion This for each succeeding F2 generation in Southern Arizona. The established variety Mexicali 75, soon emerged as the most satisfactory

Application for Plant Variety Protection Certificate

Exhibit A. Continued

check variety under these growing conditions. Consequently was used repeatedly along with many emerging selections for topcrossing each year for combining and re-combining genes. Mexicali 75 is still the check variety in evaluation of yield selections from this on-going population.

Utopia was increased from a single F_2 head selection made in the spring of 1987 at Maricopa, Arizona. The F_3 "best plant" selection was made at Post Falls, Idaho that fall. Seed was held until increased at Maricopa in 1991 as F_4 and in 1992 as bulk F_5. Low input yield evaluations also began. A single F_6 head selection was made in 1993. The F_7 row was grown in Moscow, Idaho in 1993 under severe Hessian Fly pressure, with "best plant" harvest and increased at Maricopa in 1994 in two single rows. A 1995 strip increase was the basic breeder seed for the first foundation seed planting in 1996.

With MSFRS breeding no attempt is made to observe segregating (or dominance) in the F_1 as hundreds of crosses may be increased in a single F_1 bulk increase. The main selection criteria for low input parents as a group and in segregating early generation F_2 to F_4 were earliness, tillering expression determinate heading and large well filled spikes with large plump seeds, In generation 5 to 7 quality determination on the larger seeds of Utopia along with yielding potential under adverse and generally low input conditions of production was the key to variety status.

The seed was increased at Maricopa Arizona to Certified Foundation in 1996. This seed was quarantined for Karnal bunt. Purification head rows grown at Maricopa in 1996 were also quarantined, but treated as per Karnal Bunt protocol and increased at Quincy Washington and Ronan Montana in 1997. Seed was transferred to General Mills of Great Falls Montana for evaluation studies in September 1998. General Mills was licensed for marketing the variety January 3, 1999.

Utopia is uniform and stable. Utopia exhibits uniformity and yield stability within cultural regimes and was observed to be uniform and stable for five years (1994 – 1999) in Southern Arizona both under high inputs, fully irrigated and low inputs with restricted irrigation. Utopia was observed to be uniform and stable for 3 years (1997 – 1999) in Montana. Utopia reacts to extreme stress, lack of soil moisture and other soil environmental factors with lighter colored awns than those present in adjoining more productive areas. This was observed in both Arizona and in Montana..

In the 1996 foundation seed increase at Maricopa Arizona plants with white awns were rogued at approximately 1 in 500. Head row selection alleviated this situation somewhat. Genetic recessive male sterility was utilized in variety development. Black awns are dominant. Because of the possibility of seed set on remaining unidentified male sterile plants and failure to identify white awns, male sterile and/or white awns may appear in the next generation at up to 1 in 500 plants. Additional Foundation seed was grown at ButtonWillow, California in 1998 and white awned plants were rogued at near 1 in 500 plants. Breeder seed increased at Maricopa, Arizona in 1998 and grown for Foundation seed at Marana, Arizona 1999 was relatively free of white awned plants.

Application for Plant Variety Protection Certificate

Exhibit B. Statement of Distinctness:

Mexicali 75 is the most similar variety to Utopia except for the following differences.

At maturity:

1. Utopia has black awns - Mexicali 75 has white awns
2. Utopia has semi-deciduous awns - Mexicali 75 has non-deciduous awns.
3. Utopia glume beaks have a distinct black ridge on back side of beak, Mexicali 75 glume beaks are all white.
4. Utopia glume shoulders have, not so prominent, but black marking on glume shoulders vein or ridge – Mexicali 75 glume shoulders are all white.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(*Wheat*)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*Triticum* spp.)

NAME OF APPLICANT(S)
World Wide Wheat, L.L.C.

ADDRESS (*Street and No. or R.F.D. No., City, State, and Zip Code*)
2850 South 36th Street
Suite A-9
Phoenix Arizona 85034

FOR OFFICIAL USE ONLY

PVPO NUMBER 9900209

VARIETY NAME
Utopia

TEMPORARY OR EXPERIMENTAL DESIGNATION
DOI 933

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g. [ ][ ] or [ ]) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: _____

Please answer all questions for your variety; lack of response may delay progress of your application.

1. KIND:

[2] 1=Common 2=Durum 3=Club 4=Other (SPECIFY) _____

2. VERNALIZATION:

[1] 1=Spring 2=Winter 3=Other (SPECIFY) _____

3. COLEOPTILE ANTHOCYANIN:

[1] 1=Absent 2=Present

4. JUVENILE PLANT GROWTH:

[3] 1=Prostrate 2=Semi-erect 3=Erect

5. PLANT COLOR (boot stage):

[2] 1 = Yellow-Green 2 = Green 3 = Blue-Green

6. FLAG LEAF (boot stage):

[1] 1 = Erect 2 = Recurved [1] 1 = Not Twisted 2 = Twisted

7. EAR EMERGENCE:

[ ][2] Number of Days Earlier Than Mexicali 75 *

[ ][0] Number of Days Later Than _____ *

8. ANTHER COLOR:

[1] 1 = YELLOW 2 = PURPLE

9. PLANT HEIGHT (from soil to top of head, excluding awns):

[ ][3] cm Taller Than Duraking - irrigated (2cm low input) *

[1][1] cm Shorter Than Mexicali 75 - irrigated (5cm low input) *

* Relative to a PVPO-Approved Commercial Variety Grown in the Same Trial

9900209

10. STEM:

A. ANTHOCYANIN
[1] 1= Absent 2=Present

B. WAXY BLOOM
[2] 1=Absent 2=Present

C. HAIRINESS (last internode of rachis)
[2] 1=Absent 2=Present

D. INTERNODE (SPECIFY NUMBER) 4
[1] 1=Hollow 2=Semi-solid 3=Solid

E. PEDUNCLE
[2] 1=Absent 2=Present

[35] cm Length

11. HEAD (at Maturity):

A. DENSITY
[2] 1=Lax 2=Middense 3= Dense

B. SHAPE
[1] 1 = Tapering 2= Strap 3 = Clavate 4 = Other (SPECIFY)

C. CURVATURE
[2] 1 = Erect 2 = Inclined 3 = Recurved

D. AWNEDNESS
[4] 1 = Awnless 2 = Apically Awnletted 3 = Awnletted 4 = Awned

12. GLUMES (at Maturity):

A. COLOR
[1] 1 = White 2 = Tan 3 = Other (SPECIFY)

B. SHOULDER
[4] 1 = Wanting 2 = Oblique 3 = Rounded 4 = Square 5 = Elevated 6 = Apiculate

C. BEAK
[3] 1 = Obtuse 2 = Acute 3 =Acuminate

D. LENGTH
[3] 1 = Short (ca. 7mm) 2 = Medium (ca. 8mm) 3 = Long (ca. 9mm)

E. WIDTH
[3] 1 = Narrow (ca. 3mm) 2 = Medium (ca. 3.5mm) 3 = Wide (ca. 4mm)

13. SEED:

A. SHAPE
[3] 1 = Ovate 2 = Oval 3 = Elliptical

B. CHEEK
[1] 1=Rounded 2=Angular

C. BRUSH
[2] 1=Short 2=Medium 3=Long

[1] 1 = Not Collared 2 = Collared

D. CREASE
[3] 1 = Width 60% or less of Kernel
2 = Width 80% or less of Kernel
3 = Width Nearly as Wide as Kernel

[3] 1 = Depth 20% or less of Kernel
2 = Depth 35% or less of Kernel
3 = Depth 50% or less of Kernel

13. SEED: (continued)

E. COLOR

[2] 1 = White 2 = Amber 3 = Red 4 = Other (SPECIFY) 9900209

F. TEXTURE

[1] 1=Hard 2=Soft

G. PHENOL REACTION *(see instructions)*:

[2] 1 = Ivory 2 = Fawn 3 = Light Brown 4 = Dark Brown 5 = Black

14. DISEASE: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

Stem Rust *(Puccinia graminis* f. sp. *tritici)* [0]

Stripe Rust *(Puccinia striiformis)* [0]

Tan Spot *(Pyrenophora tritici-repentis)* [0]

Halo Spot *(Selenophoma donacis)* [0]

Septoria nodorum (Glume Blotch) [0]

Septoria avenae (Speckled Leaf Disease) [0]

Septoria tritici (Speckled Leaf Blotch) [0]

Scab (*Fusarium* spp.) [0]

"Black Point" (Kernel Smudge) [0]

Barley Yellow Dwarf Virus (BYDV) [0]

Soilborne Mosaic Virus (SBMV) [0]

Wheat Yellow (Spindle Streak) Mosaic Virus [0]

Wheat Streak Mosaic Virus (WSMV) [0]

Other (SPECIFY) [ ]

Other (SPECIFY) [ ]

Other (SPECIFY) [ ]

Leaf Rust *(Puccinia recondita* f. sp. *tritici)* [2]

Loose Smut *(Ustilago tritici)* [0]

Flag Smut *(Urocystis agropyri)* [0]

Common Bunt *(Tilletia tritici* or *T. laevis)* [0]

Dwarf Bunt *(Tilletia controversa)* [0]

Karnal Bunt *(Tilletia indica)* [0]

Powdery Mildew *(Erysiphe graminis* f. sp. *tritici)* [ ]

"Snow Molds" [ ]

Common Root Rot *(Fusarium, Cochliobolus* and *Bipolaris* spp.) [ ]

Rhizoctonia Root Rot *(Rhizoctonia solani)* [ ]

Black Chaff *(Xanthomonas campestris* pv. *translucens)* [ ]

Bacterial Leaf Blight *(Pseudomonas syringae* pv. *syringae)* [ ]

Other (SPECIFY) [ ]

Other (SPECIFY) [ ]

Other (SPECIFY) [ ]

Other (SPECIFY) [ ]

15. INSECT: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant) 9900209

PLEASE SPECIFY BIOTYPE (where needed)

Hessian Fly *(Mayetiola destructor)*	4	Other (SPECIFY)
Stem Sawfly *(Cephus* spp.)	0	Other (SPECIFY)
Cereal Leaf Beetle *(Oulema melanopa)*	0	Other (SPECIFY)
Russian Aphid *(Diuraphis noxia)*	0	Other (SPECIFY)
Greenbug *(Schizaphis graminum)*	0	Other (SPECIFY)
Aphids	0	Other (SPECIFY)

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS:

Application for Plant Variety Protection Certificate

Exhibit D. Additional Description of the Variety:

Utopia is a semidwarf spring durum. Juvenile growth is erect. The flag leaf at booting is erect and dark green. At maturity, stem and spike are white with black awns. Spikes are mid-dense, slightly tapered and incline at 15° angle at maturity. Lodging susceptibility is somewhat less than for Mexicali 75. Plant height ranges from 6 inches shorter under full irrigation and fertilization to 1 to 2 inches shorter than Mexicali 75 under more stringent low input conditions. Maturity is very early, similar to Mexicali 75.

Seeds of Utopia are large and long, elliptical, yellow amber and relatively free of black point with shallow creases and rounded cheeks. Seed size and weight at 61 grams per 1000 kernels is usually greater than that for Mexicali 75 at 58 grams. Test weights are similar. Glumes are large, long and glabrous with rounded to elevated shoulders. The glume beak is 3mm long and black. The shoulder ridge is black. Awns are long, black and semi-deciduous.

Utopia has been tested and is adapted to the irrigated areas of Arizona and Southern California where desert durum's are grown as well as having a special adaptation to production with limited irrigation's. Evaluation trials indicate that it is adapted to rainfed cultural regimes of Oregon, Idaho and Montana. Pasta making qualities of color, gluten strength and content and protein are suitable for commercial and identity preserved markets.

Exhibit D-1. Agronomic and Quality Evaluations:

Performance Data (*Tables 1-10*)

Table 1.
Performance Comparisons for high input fully irrigated trails at Maricopa Arizona for five location years, 1994 - 1998.

	Utopia	Mexicali 75	Duraking	Durex	Reva	Ria	Westbred 881
Yield Lbs. per Acre	6321	6204	6828	5926	6303	6549	5810
Test weight Lbs. per bushel	64.9	63.3	65.4	64.7	63.7	64.2	--
Plant height Inches	37.3	40.8	36.0	36.4	35.8	38.5	--
Percent lodging At maturity	0.0	21.0	1.0	0.0	1.5	2.5	--
Date 50% Headed	March 16	March 18	March 24	March 19	March 21	March 21	--

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Table 2.
Low input Performance Comparisons at Maricopa Arizona for six location years, 1992 - 1998.

	Utopia	Mexicali 75	DOI 126	DOI 920	DOI 833	Harmony (D9529)	DOI 930
Yield Lbs. per Acre	3584	3415	3505	3305	3222	(2817)	(2514)
Test weight Lbs. per bushel	61.7	60.8	(62.0)	61.7	62.4	59.4	61.7
Plant height Inches	33.8	35.8	33.0	32.5	35.6	32.0	32.0
Percent lodging At maturity	0.0	2.0	1.0	0.0	1.0	0.0	0.0
Date 50% Headed	March 23	March 26	March 25	March 24	March 23	March 29	March 23

Table 3.
Yield Comparisons in low rainfall areas of three Northwest states. Test conducted by Plant Breeders 1, Moscow Idaho in 1995.
Average yield in pounds per acre

	Utopia	[3] Mexicali 75	[2] Westbred 881	[1] Pennawawa	DOI 920	DOI 833	Harmony (D9529)
Joplin, MT	866	1213	737	1107	1576	761	1857
Tammany, ID	1027	863	811	1871	726	1241	748
Echo, OR	2694	1130	2029	2156	2348	2743	2513
Average	1527	1069	1206	1711	1548	1582	1706

[1]. Pennawawa - is a soft white Yield Check
[2]. Westbred 881 - Identity preserved durum variety with excellent pasta quality
[3]. Mexicali 75 - Low input yield check used in Arizona

Table 4.
Yield Comparisons at Ronan Montana, a good rainfed condition in 1997.
Yield in pounds per acre

Utopia	Westbred 881	Duraking	Durex	DOI 930	Harmony (D9529)
6098	5938	6098	5910	6098	5978

Table 5.
Yield Comparisons at Moses Lake Washington, Irrigated.
Yield in pounds per acre

Utopia	Westbred 881	Platinum	Durex	Ria	DOI 930	D1138
5518	4066	4695	4017	4017	4453	4839

Table 6a.
Preliminary Quality Screening Comparisons.

Grain Protein %	Utopia	Mexicali 75	DOI 126	DOI 920	Delta Queen (DOI 930)	Harmony (D9529)	DOI 942	DOI 833
1992	12.6	11.5	12.3	14.8	13.9	- -	13.6	14.7
1994	15.0	10.4	14.7	14.6	14.5	17.0	14.2	14.2

Table 6b.
Preliminary Quality Screening Comparisons.

SDS(sedimentation) rate ml	Utopia	Mexicali 75	DOI 126	DOI 920	Delta Queen (DOI 930)	Harmony (D9529)	DOI 942	DOI 833
1992	45.0	49.0	61.0	60.0	39.0	- -	54.0	61.0
1994 [1]	8.5	5.2	10.2	9.2	8.8	8.7	7.4	6.2

[1]. Sedimentation rates modified SDS by the University of Idaho Laboratory - Aberdeen Idaho

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Table 7.
Quality Comparisons, California Wheat Commission Analysis for production year 1996.

DOI 933 (Utopia) Variety Comparisons, Wheat, Milling, Semolina and Pasta Analysis 1996 Production [2]

Wheat	Utopia	Duraking	Reva	Harmony (D9529)	Command (D3100)	DOI 920	D1138	D1268	Trump (D2656)	Ria
Protein % (12%m)	13.55	12.16	14.80	14.29	13.25	12.82	13.83	13.98	12.65	13.68
Test Weight (lbs/bu)	64.5	65.4	63.8	65.2	65.0	64.8	65.8	63.6	63.6	63.5
1,000 Kernel wt.	65.8	56.5	43.5	51.6	61.0	59.5	65.8	48.8	55.0	52.4
Milling										
Total Flour %	75.4	75.8	72.7	76.2	77.5	75.4	76.9	73.9	74.1	76.8
Semolina %	65.9	65.7	63.8	64.8	66.0	65.1	64.2	63.5	64.1	64.6
Semolina										
Protein %	12.27	10.79	12.92	12.91	12.58	11.67	12.85	13.72	11.76	12.70
Ash %	.82	.79	.73	.81	.82	.75	.69	.73	.76	.93
Speck	26	29	18	25	28	27	27	34	24	39
Alveograph – W	184	178	258	148	268	274	136	153	178	231
Alveograph – P/L	4.98	3.91	2.17	1.2	2.14	3.24	1.52	1.17	1.37	2.16
Wet Gluten %	37.0	31.5	34.5	41.7	34.7	35.2	38.5	39.4	37.5	35.2
Dry Gluten %	14.1	11.8	12.3	16.4	13.3	14.0	14.7	15.3	14.3	13.9
Color (b value)	21.92	20.06	25.08	21.41	19.06	21.18	23.39	20.38	22.21	26.70
Pasta										
Color (COR)	7.0	6.0	- -	8.5	6.0	7.5	7.5	7.5	8.5	9.0
Cooked wt (g)	30.66	31.6	- -	30.75	31.39	30.60	30.94	30.57	30.84	31.00
Cooked loss %	7.1	7.1	- -	6.6	6.9	6.9	6.5	5.8	6.5	6.5
Firmness (gcm)	6.5	6.36	- -	8.15	7.17	7.37	7.63	8.39	7.10	7.55

[1] The Reva check data was taken from the 1994 production year
[2] Data analysis by the California Wheat Commission Laboratory

Table 8.
Quality Comparisons, Bay State Milling Company analysis for Production year 1995.

	Utopia	DOI 920	Duraking	D9545	DOI 126	Platinum	Crown	Harmony (D9529)
#/bu	66.0	61.0	66.0	65.0	62.0	66.5	62.6	62.5
Flour % protein	11.63	15.15	11.54	12.42	14.31	11.96	13.36	13.50
Ash %	.55	.63	.61	.71	.64	.61	.64	.65
Mixograph	6	8	5	7	7	6	6	7
Color								
L	88.7	88.7	89.3	88.4	88.4	88.7	88.4	88.1
a	-2.7	-2.8	-2.6	-2.8	-2.4	-3.2	-3.0	-2.9
b	15.8	18.4	14.0	17.4	17.4	19.1	18.3	18.7
Estimated Color Rank	7	3	8	5	6	1	2	4

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Table 9a.
Montana Statewide Drum Yield Averages 1997
Bushels per Acre

	Havre Dry	Moccasin Dry	Conrad Dry	Conrad Irrigated	Sidney Dry	Sidney Irrigated	Bozeman Dry	Average
Durfort	42.17	51.23	53.10	92.67	16.40	48.73	90.90	**56.5**
DOI 933	49.23	58.70	54.00	91.03	16.07	56.03	104.33	**61.3**
Gold Cup	38.70	51.87	50.13	89.60	16.03	44.93	98.90	**55.7**
Kronos	42.47	47.43	50.93	84.40	13.63	48.20	76.77	**52.0**
Dressler	43.27	57.13	52.77	88.97	25.43	71.70	78.40	**59.7**
Voss	45.20	58.97	54.37	99.27	21.87	59.83	87.07	**60.9**
Kyle	43.47	56.40	51.33	85.83	31.27	77.50	72.67	**59.8**
Plenty	48.90	56.43	55.63	84.40	25.40	67.50	86.77	**60.7**
Ward	43.20	50.10	45.50	76.83	22.27	63.80	74.23	**53.7**
Vic	43.07	57.60	46.53	80.00	25.07	68.37	79.30	**57.1**
Ben	43.73	53.40	50.03	84.23	22.77	66.57	81.37	**57.4**
Medora	43.47	51.50	47.00	73.47	24.23	63.13	81.03	**54.8**
Munich	43.13	56.93	52.37	87.87	21.37	64.53	89.73	**59.4**
Westbred 881	44.97	51.10	54.13	88.60	13.53	55.73	84.93	**56.1**
Lloyd	41.57	53.57	48.90	84.47	20.17	56.93	85.23	**55.8**
Monroe	45.53	55.97	46.30	71.70	15.43	59.63	71.33	**52.3**
Renville	45.17	58.93	43.57	80.63	21.07	72.30	82.40	**57.7**
McNeal [1]	47.97	64.87	55.87	86.47	25.7	70.20	95.37	**63.8**
Laker	43.53	50.50	47.97	89.13	23.13	57.00	91.03	**57.5**
Site Mean	**44.14**	**54.86**	**50.55**	**85.24**	**21.11**	**61.72**	**84.83**	**57.5**

[1] McNeal is Hard Red Spring Yield Check

Table 9b.
Montana Statewide Drum Test Weight Averages 1997
Pounds per Bushel

	Havre Dry	Moccasin Dry	Conrad Dry	Conrad Irrigated	Sidney Dry	Sidney Irrigated	Bozeman Dry	Average
Durfort	58.93	60.90	61.50	62.90	59.37	58.00	60.50	**60.3**
DOI 933	58.50	60.87	60.70	63.20	59.50	59.00	61.60	**60.5**
Gold Cup	62.57	63.57	64.20	65.50	60.30	60.00	63.50	**62.8**
Kronos	58.00	61.33	60.70	63.20	59.80	56.17	61.40	**60.1**
Dressler	60.13	62.83	62.00	63.70	58.83	62.17	62.90	**61.8**
Voss	60.93	62.23	62.30	63.80	59.97	59.50	62.30	**61.6**
Kyle	60.23	62.50	61.00	63.30	58.67	60.17	61.10	**61.0**
Plenty	59.63	62.10	61.10	63.30	58.33	61.33	62.30	**61.2**
Ward	61.17	62.00	61.50	63.30	60.17	60.33	62.30	**61.5**
Vic	69.10	62.20	61.00	63.10	59.17	60.83	62.30	**61.2**
Ben	61.27	62.50	62.40	63.80	59.90	62.17	62.70	**62.1**
Medora	61.33	62.53	61.70	63.10	59.13	61.83	62.40	**61.7**
Munich	59.77	61.67	61.90	63.40	59.67	61.33	62.30	**61.4**
Westbred 881	59.80	61.17	61.00	62.90	58.17	59.50	61.20	**60.5**
Lloyd	59.10	61.93	62.40	64.10	59.37	61.00	63.10	**61.6**
Monroe	59.37	61.83	61.20	63.00	59.87	61.17	61.90	**61.2**
Renville	59.77	62.23	60.80	63.08	59.57	61.33	63.40	**61.4**
McNeal [1]	58.43	61.47	60.90	62.80	56.50	60.83	61.90	**60.4**
Laker	61.30	62.67	62.20	62.90	59.30	59.00	62.70	**61.4**
Site Mean	**60.02**	**62.03**	**61.61**	**63.38**	**59.24**	**60.30**	**62.20**	**61.3**

[1] McNeal is Hard Red Spring Yield Check

Table 10a.
Montana Statewide Drum Yield Averages 1998
Bushels per Acre

	Havre	Moccasin	Conrad dryland 1[1]	Conrad dryland 2	Bozeman	**Average**
Durfort	31.03	27.07	65.60	66.40	90.30	**56.3**
DOI 933	31.50	35.17	72.03	64.00	93.00	**59.1**
Kyle	32.37	30.90	70.87	69.43	70.63	**54.8**
Plenty	33.10	31.67	72.53	71.93	76.73	**57.2**
Ward	32.37	27.23	58.40	54.60	77.30	**49.6**
Crosby	33.63	29.67	65.10	61.33	74.93	**52.9**
Vic	34.33	35.20	67.77	73.17	81.80	**58.5**
Ben	36.47	32.60	69.40	68.07	89.07	**59.1**
Sceptre	33.17	33.43	69.17	63.13	83.67	**56.5**
Medora	34.73	29.37	63.67	68.33	79.80	**55.2**
Belzer	36.77	31.00	76.53	70.07	92.93	**61.3**
Munich	32.73	32.83	74.97	71.33	87.43	**59.8**
NPB87110 4E	34.77	30.77	71.80	72.60	90.93	**60.2**
Westbred 881	31.87	29.43	59.17	67.57	86.40	**54.9**
Lloyd	36.07	32.10	78.83	64.70	99.67	**62.3**
Monroe	28.80	32.90	68.90	65.03	77.90	**54.7**
Renville	35.13	28.97	71.80	75.80	82.37	**58.8**
McNeal[*]	39.63	32.10	74.27	78.57	84.10	**61.7**
Laker	33.50	34.17	72.87	69.83	89.00	**59.9**
Site Mean	**33.74**	**31.40**	**69.81**	**68.20**	**84.83**	**57.5**

[*] McNeal is Hard Red Spring Yield Check

[1] "dryland 1 denotes traditional dryland site, dryland 2 denotes irrigated site with higher seeding rate but no irrigation

Table 10b.
Montana Statewide Drum Test Weight Averages 1998
Pounds per Bushel

	Havre	Sidney	Conrad dryland 1[1]	Conrad Dryland 2	Bozeman	Average
Durfort	58.13	58.87	60.20	58.00	58.80	**58.8**
DOI 933	61.03	60.93	63.50	60.50	61.10	**61.4**
Kyle	58.70	55.10	62.80	60.10	61.20	**60.4**
Plenty	57.93	60.73	62.40	58.80	60.70	**60.3**
Ward	60.10	59.93	62.20	59.10	61.40	**60.5**
Crosby	59.77	59.33	62.60	60.50	61.70	**60.8**
Vic	60.33	60.17	63.70	61.90	61.90	**61.6**
Ben	60.90	60.80	64.20	62.40	62.00	**62.1**
Sceptre	67.63	58.83	60.90	57.60	61.00	**59.2**
Medora	60.67	60.07	63.80	61.90	61.10	**61.5**
Belzer	58.50	60.03	61.90	59.10	60.40	**60.0**
Munich	58.80	59.80	63.10	60.70	60.90	**60.7**
NPB87110 4E	57.80	57.77	61.20	58.40	58.40	**58.7**
Westbred 881	62.20	60.93	63.50	62.90	62.20	**62.3**
Lloyd	57.63	59.80	61.50	57.70	58.70	**59.1**
Monroe	60.33	60.07	61.90	59.90	61.10	**60.7**
Renville	60.40	58.67	62.40	61.10	61.50	**60.8**
McNeal[*]	57.43	58.40	61.80	61.00	60.80	**59.9**
Laker	59.83	60.77	62.60	60.50	60.60	**60.9**
Site Mean	**59.37**	**59.74**	**62.43**	**60.16**	**60.82**	**60.5**

[*] McNeal is Hard Red Spring Yield Check

[1] "dryland 1 denotes traditional dryland site, dryland 2 denotes irrigated site with higher seeding rate but no irrigation

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
World Wide Wheat, L.L.C.	DOI 933	Utopia
4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	**5. TELEPHONE** *(include area code)*	**6. FAX** *(include area code)*
2850 South 36th Street Suite A-9 Phoenix Arizona 85034	602 470-1345	602 470-1685
	7. PVPO NUMBER	9900209

8. Does the applicant own all rights to the variety? *Mark an "X" in appropriate block.* If no, please explain. [X] YES [ ] NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company? [X] YES [ ] NO
If no, give name of country

10. Is the applicant the original owner? [X] YES [ ] NO *If no, please answer one of the following:*

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

[ ] YES [ ] NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

[ ] YES [ ] NO If no, give name of country

11. Additional explanation on ownership *(if needed, use reverse for extra space)*:
The variety for which Plant Variety Protection is here by sought was developed by Rex K. Thompson, an employee of World Wide Wheat,L.L.C. By agreement between employee and World Wide Wheat, L.L.C. all rights to any invention, discovery or development made by the employee while employed by World Wide Wheat,L.L.C. are assigned to World Wide Wheat,L.L.C. With no ownership rights pertaining to Utopia being retained by the employee. By implied and separate agreement between Rex K.Thompson and World Wide Wheat,L.L.C., part of the royalty income from ~~CLASSIFIED~~ Utopia is assigned to the employee.

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

STD-470-E (07-97) *(Destroy previous editions).*
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